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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ANDERSON, JAMES D	
ART UNIT	PAPER NUMBER
1614	
MAIL DATE	DELIVERY MODE
01/30/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/781,894	KUCERA ET AL.	
	Examiner	Art Unit	
	JAMES D. ANDERSON	1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) *9-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Formal Matters

Applicants' response and amendments to the claims, filed 10/27/2008, are acknowledged and entered. Claims 1-39 are pending.

Claims 9-38 remain withdrawn from further consideration as being drawn to non-elected subject matter pursuant to the Requirement for Election/Restriction mailed 6/22/2007 and Applicant's Response to Election/Restriction filed 9/6/2007 and 11/1/2007.

Accordingly, claims 1-8 and 39 are presently under examination and are the subject of this Office Action.

Claim Rejections - 35 USC § 112 – 1st Paragraph – New Ground of Rejection

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The rejection of claims 1-8 and 39 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, is **withdrawn** in light of Applicant's amendments.

Claims 1-2, 7-8, and 39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. This is a written description rejection, rather than an enablement rejection under 35 U.S.C. 112, first paragraph. Applicant is directed to the Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, 1st "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

The claims are drawn to methods comprising administering a compound of Formula I wherein R_2 is –OX, where X is C_1-C_5 alkyl, C_2-C_5 alkenyl, or C_2-C_5 alkynyl. The introduction of the limitation X is C_2-C_5 alkenyl or C_2-C_5 alkynyl introduces new matter into the disclosure.

Vas-Cath Inc. V. Mahurkar, 19 USPQ2d 1111, states that Applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention, for purposes of the written description inquiry, is whatever is now claimed (see page 1117).

Lack of Ipsis Verbis Support

The present application is void of support for the newly claimed administration of compounds of Formula I where X is C_2-C_5 alkenyl or C_2-C_5 alkynyl. The instant specification discloses the use of compounds of Formula I where X is C_1-C_{22} alkyl, C_2-C_{22} alkenyl, and C_2-C_{22} alkynyl (page 5, line 13), where X is C_1-C_{14} alkyl, C_2-C_{14} alkenyl, or C_2-C_{14} alkynyl (page 5, lines 15-16), where X is $-CH_2CH_3$ (*i.e.*, C_2 *alkyl*), $-CH_2CH_2CH_3$ (*i.e.*, C_3 *alkyl*), $-CH_2CH_2CH_2CH_3$ (*i.e.*, C_4 *alkyl*), or $-C_{10}H_{21}$ (*i.e.*, C_{10} *alkyl*) (page 5, lines 17-18), where X is C_1-C_5 alkyl (page 5, line 19), or where X is C_9-C_{11} alkyl (page 5, line 20). As such, the disclosure provides explicit support for the claimed C_1-C_5 alkyl, but not for the claimed C_2-C_5 alkenyl or C_2-C_5 alkynyl.

Lack of Implicit or Inherent Support

Section 2163 of the MPEP states: "While there is no *in haec verba* requirement, newly added claim limitation must be supported in the specification through express, implicit, or inherent disclosure".

As discussed *supra*, the instant specification discloses the administration of compounds of Formula I where X is C_1-C_{22} alkyl, C_2-C_{22} alkenyl, and C_2-C_{22} alkynyl (page 5, line 13), where X is C_1-C_{14} alkyl, C_2-C_{14} alkenyl, or C_2-C_{14} alkynyl (page 5, lines 15-16), where X is $-CH_2CH_3$ (*i.e.*, C_2 alkyl), $-CH_2CH_2CH_3$ (*i.e.*, C_3 alkyl), $-CH_2CH_2CH_2CH_3$ (*i.e.*, C_4 alkyl), or $-C_{10}H_{21}$ (*i.e.*, C_{10} alkyl) (page 5, lines 17-18), where X is C_1-C_5 alkyl (page 5, line 19), or where X is C_9-C_{11} alkyl (page 5, line 20).

One skilled in the art would not conclude that the instant specification provides adequate support for a method comprising administration of compounds of Formula I where X is C_2-C_5 alkenyl or C_2-C_5 alkynyl as recited in the instant claims. In view of the teachings of the instant

specification, one would conclude that Applicants did not intend that the recited X substituent be limited to the claimed C_2-C_5 alkenyl or C_2-C_5 alkynyl as recited in the presently amended claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

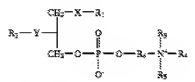
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kucera *et al.*** (U.S. Patent No. 5,962,437; Issued Oct. 5, 1999; Filed Aug. 7, 1995) in view of **Kucera *et al.*** (U.S. Patent No. 5,770,584; Issued Jun. 23, 1998; Filed Jun. 6, 1995).

The instant claims recite methods of treating RSV infections comprising administering a compound of Formula I.

Kucera *et al.* teach methods of treating viral infections comprising administering to a subject a phospholipid or phospholipid derivative (Abstract). Such phospholipid derivatives are defined as compounds of Formula I:



In the compounds of Formula I, R_1 is a branched or unbranched, saturated or unsaturated C_6 to C_{16} alkyl group optionally substituted from 1 to 5 times with —OH, —COOH, oxo, amine, or substituted or unsubstituted aromatic; X is selected from the group consisting of NHCO, CH_2NCO, CONH, $CONCH_3$, S, SO, SO_2, O, NH, and NCH_3; R_2 is a branched or unbranched, saturated or unsaturated C_2 to C_{25} alkyl group optionally substituted from 1 to 5 times with —OH, —COOH, oxo, amine, or substituted or unsubstituted aromatic; Y is selected from the group consisting of NHCO, CH_2NCO, CONH, $CONCH_3$, S, SO, SO_2, O, NH, and NCH_3; R_3 is a branched or unbranched C_2 to C_6 alkyl group; and R_3, R_4, and R_5 are independently methyl or ethyl, or R_3 and R_4 together form an aliphatic or heterocyclic ring having five or six members and R_5 is methyl or ethyl. Preferred compounds include 1-dodecanamido-2-decyloxypropyl-3-phosphocholine, 1-dodecanamido-2-octyloxypropyl-3-phosphocholine, and 1-dodecanamido-2-dodecyloxypropyl-3-phosphocholine. The method is particularly preferred as a treatment to combat viral infections caused by HIV-1, HBV, and herpes simplex virus. The present invention also includes pharmaceutical compositions comprising a compound of Formula I and a suitable pharmaceutical carrier.

Kucera *et al.* thus clearly envision using the claimed compounds of Formula I to treat viral infections. The compounds are taught to work via attachment to cell membranes and thus are particularly effective against infections caused by membrane-containing or envelope-containing viruses (col. 9, lines 42-45). While Kucera *et al.* exemplify the treatment of HIV-1 infections, the inventors state that the compounds of Formula I can also be used to treat the instantly claimed respiratory syncytial virus infections (col. 9, lines 56-61). With respect to claim 39, which recites modes of administration, Kucera *et al.* teach the same modes of administration (col. 10, lines 14-21).

The presently amended claims differ from Kucera *et al.* in that the claimed compounds are now limited to compounds of Formula I wherein R_2 is –OX, where X is C_1-C_5 alkyl, C_2-C_5 alkenyl, or C_2-C_5 alkynyl. In the compounds disclosed in Kucera *et al.*, instantly claimed R_2 corresponds to $-Y-R_2$, wherein Y is O and R_2 is a branched or unbranched, saturated or unsaturated C_6 to C_{14} alkyl group. The instantly claimed compounds thus differ from those disclosed in Kucera in the length of the alkyl chain attached to the –OX substituent.

Kucera *et al*. clearly suggest that the length of attached alkyl groups can be modified and still elicit functional antiviral compounds. For examples, compounds wherein R_2 is C_8, C_{10}, and C_{12} were all demonstrated to have antiviral activity (Table 1). The courts have held that "structural similarity between claimed and prior art subject matter, proved by combining references or otherwise, where the prior art gives reason or motivation to make the claimed compositions, creates a prima facie case of obviousness." *Dillon*, 919 F.2d at 692. In addition to structural similarity between the compounds, a prima facie case of obviousness also requires a showing of "adequate support in the prior art" for the change in structure. *In re Grabiak*, 769 F.2d 729, 731-32 [226 USPQ 870] (Fed. Cir. 1985).

The court elaborated on this requirement in the case of *In re Deuel*, 51 F.3d 1552, 1558 [34 USPQ2d 1210] (Fed. Cir. 1995), where the court stated that "[n]ormally a prima facie case of obviousness is based upon structural similarity, *i.e.*, an established structural relationship between a prior art compound and the claimed compound." That is so because close or established "[s]tructural relationships may provide the requisite motivation or suggestion to modify known compounds to obtain new compounds." *Id.* A known compound may suggest its homolog, analog, or isomer because such compounds "often have similar properties and therefore chemists of ordinary skill would ordinarily contemplate making them to try to obtain compounds with improved properties." *Id.*

In the instant case, Applicant's compounds differ from Kucera's compounds in that the claimed compounds are homologs of those disclosed in Kucera (*i.e.*, the claimed compounds only differ in the length of the alkyl, alkenyl, or alkynyl chain attached at the R_2 position of the Kucera compounds. Kucera discloses branched or unbranched, saturated or unsaturated C_6 to C_{14} alkyl groups whereas the instant claims recite C_1-C_5 alkyl, C_2-C_5 alkenyl, or C_2-C_5 alkynyl groups. However, in light of the fact that Kucera clearly contemplates that the alkyl groups attached to the R_2 position can vary greatly (from C_6 to C_{14} carbons) and further in view of the fact that compounds with differing alkyl chain lengths all possess antiviral activity, one skilled in the art would have found it obvious that compounds having chain lengths of from C_1 to C_5 carbons would also possess antiviral activity.

In support of the above findings, the Examiner additionally cites Kucera *et al*. ('584) who disclose methods of treating hepatitis virus infections comprising administering compounds of

Formula I, which compounds are structurally related to the claimed compounds and those disclosed in Kucera *et al.* ('437) (see col. 1, line 60 to col. 2, line 48). See also compounds CP-48, CP-49, CP-50, and CP-51 in Example 6, which are phospholipid compounds as recited in the instant claims wherein R_2 is CH_3 or $-CH_2CH_3$ (*i.e.*, C_1 or C_2 alkyl). These compounds were demonstrated to have anti-HBV activity. Compare to Kucera *et al.* ('437), wherein compound CP-128 (R_2 is C_{10}) disclosed therein is also demonstrated to have anti-HBV activity (Example 9).

Accordingly, the instantly claimed methods of treating RSV infections comprising administering a compound of Formula I would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made. Kucera *et al.* ('437) clearly motivate one skilled in the art to use compounds of Formula I to treat viral infections and even teach that respiratory syncytial virus infections are a type of infection that may be treated with the compounds of the invention. Kucera *et al.* ('584) is provided as evidence that compounds having lower alkyl groups in the R_2 position maintain antiviral activity. As such, one skilled in the art would have been imbued with at least a reasonable expectation that the compounds of Formula I as taught in Kucera *et al.* ('437) having C_1-C_5 alkyl, C_2-C_5 alkenyl, or C_2-C_5 alkynyl groups in the R_2 position would also be effective at treating viral infections, including the instantly claimed RSV.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned

with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

U.S. Patent No. 5,962,437

The rejection of claims 1-8 and 39 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 5,962,437 is **withdrawn** in view of Applicant's filing of a Terminal Disclaimer.

U.S. Patent No. 7,026,469

The rejection of claims 1-8 and 39 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12, 17, 18, and 19 of U.S. Patent No. 7,026,469 437 is **withdrawn** in view of Applicant's filing of a Terminal Disclaimer.

U.S. Patent No. 7,141,557

The rejection of claims 1-8 and 39 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11 and 14-18 of U.S. Patent No. 7,141,557 437 is **withdrawn** in view of Applicant's filing of a Terminal Disclaimer.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES D. ANDERSON whose telephone number is (571)272-9038. The examiner can normally be reached on MON-FRI 9:00 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on 571-272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James D Anderson/
Examiner, Art Unit 1614

/Ardin Marschel/
Supervisory Patent Examiner, Art Unit 1614